
SCC
Energy
& Utilities
power.
Transforming the consumer
experience through technology.

we simplify.

Transformational technologies

Introduction

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The Energy and Utilities sector faces radical transformation. Distributed renewable generation, new digital technologies and changing consumer expectations are creating a new energy world that is more complex, competitive and challenging. These changes are happening now. Survival for utilities will depend on their ability to develop new capabilities, different business models and a mindset centred around agility and collaboration.

The global shift towards more climate-conscious energy efficiency has accelerated the need for sustainable technology to deliver a cleaner, greener and fairer energy system. The UK's 2050 net-zero pledge deadline looms. Together, the IPCC's latest report on climate change, COP26 and the UK government's 10-point-plan for a green industrial revolution have added greater focus. Businesses and consumers alike have a growing appetite for sustainable initiatives.

Technologies for renewable electricity generation, energy storage and power grids are essential to decarbonise existing supply and meet growing electricity demand from rapid electrification of buildings, transport and industry. Clean technology, modern power systems and green energy sources present a vast investment opportunity for businesses.

Digital disruption is challenging the way organisations manage their legacy applications, infrastructure and how they respond to a rapid rise in cyber security attacks. The sector is also facing a significant skills gap that has been exacerbated by early retirement during the pandemic.

To address these challenges, the sector is undergoing a major change in the form of various digital transformation initiatives, with opportunities created using IoT, Blockchain and Robotic Process Automation (RPA). Data analytics can enable the organisations to unlock the power of customer data to transform into business insight. Many organisations are leveraging the capabilities of cloud-enabled digital twin technology to maximise asset performance, predict power outages and integrate distributed energy resources. In addition, there will be further investment in technology to develop outstanding customer experiences that help organisations retain and grow their clients.

At SCC, we have been working with the UK Utilities sector for over 40 years to deliver innovation, digital transformation and innovative IT services. We are uniquely placed to support the sector in this digital journey of change.

As a privately owned UK organisation, our investment continues despite ongoing economic uncertainty and low growth in the wider European economy. SCC is proud to support the sector and has the agility and flexibility to take advantage of this new age of digital transformation.

We look forward to supporting the sector on this exciting journey of change.

Key Challenges in the Energy and Utilities Sector

Future Ways of Working

A key consideration for the Energy and Utilities sector is how to support the UK's plan for energy independence. The chief executive of Octopus Energy has said the UK could eliminate its reliance on Russian gas imports within two years by increasing the number of local onshore wind farms.

A landmark commitment to decarbonise the UK's electricity system by 2035, was confirmed October 2021 by Prime Minister Boris Johnson and Business and Energy Secretary Kwasi Kwarteng, to help boost the country's efforts in achieving its net-zero ambitions.

The transition to renewable energy is central to achieving the UK's net-zero ambitions. It is estimated that global electricity demand will double by 2050, so a move towards a net-zero position requires not only an increase in renewable energy, but also greater efficiency of electricity distribution. A report by digital energy services company eEnergy suggests that the energy wasted by companies across the UK could power London for seven years and this is costing businesses £33.9 billion annually.

This energy wastage can be harnessed for greater efficiency. For example, electric vehicles and heat pumps have intrinsically higher efficiency than internal combustion engines and gas heaters, holding out the potential for long-term affordability gains and unlocking new financial value pools. Sewage and wastewater also has the potential to provide significant energy through a range of sustainable technologies, e.g. heat exchange, anaerobic digestion of sewage creating biogas and the conversion of fats, oil and greases into biodiesel.

Through this transition, technology and technology providers will play an increasing role in enabling organisations to reduce the carbon impact on the current system. Machine Learning (ML) and Artificial Intelligence (AI) can support energy and resource efficiency measures by optimising operating conditions, improving transmission and management of supply and demand.

A concern with the increased proliferation of alternative energy sources is the increased effect of natural disasters and climate change, which will have real impacts to energy sources. Along with this, there have been big infrastructure problems in recent years in this country for setting up hydrogen plants, nuclear plants, wind farms and other alternative fuel sources. This can be in part due to metropolitan areas running out of space and with the infrastructure difficult to manage when repairs are required due to staff shortages, changes in flexible working practices, remote working and increasing skill shortages. The UK could run out of warehouse space within a year, as supply chain disruption and a boom in online shopping propel demand to record levels, according to property agent Cushman & Wakefield. Population increases in urban areas also compounds the problem.

The need for sustainable innovation is also motivated through changes in consumer opinion around green energy, ethical suppliers and practices. Companies within the sector now face significant legislative and stakeholder pressure to demonstrate pathways to net-zero emissions. By 2025, a net-zero commitment and/or pathway will be a standard piece of governance for medium-to-large businesses with an international customer base.

The energy sector is no stranger to innovation. Many oil and gas companies already use cloud solutions, advanced analytics, scenario modelling, AI, ML and more in their daily operations. Such technologies can be put to use in supporting Environmental Social Governance (ESG) initiative by:

- Aggregating ESG data from across the organisation
- Tracking and analysing progress against ESG goals
- Monitoring real-time stakeholder sentiment
- Improving accountability throughout the organisation on ESG initiatives.

Cyber Security

Energy and Utilities organisations are part of the critical infrastructure of any nation, making them a high-profile target for cyber-terrorists and hackers alike. Technology now plays a critical role in enabling organisations to accelerate progress in protecting physical and digital assets, including SD-WAN and edge computing as part of an end-to-end solution to address the compelling event of BT discontinuing PSTN by 2025. The cyber threat is increasing at an alarming rate, with the UK energy sector the target of 24% of all cybersecurity incidents in the country last year. This makes the energy sector the most targeted industry, followed by the manufacturing and financial services sectors, which each received 19% of all attacks. According to IBM Security's X Force Treat Intelligence Index, the UK became one of the top three most attacked countries in Europe in 2021.

Modernisation brings efficiency gains, but also increases the attack surface through which threats can target utilities' infrastructure. Industry regulations require utilities to make further investments to meet these stringent requirements, but this can breed an attitude that compliance is sufficient. This is exposing customers, as cyber attackers are constantly evolving and growing in sophistication, so utilities must go above and beyond compliance.

The UK has been stepping up efforts to meet the security challenge, with the government publishing the National Cyber

Strategy and Government Cyber Security Strategy 2022-2030. It has also proposed amendments to the Network and Information Regulations to improve the cyber resilience of UK businesses. Additionally, the government's latest Annual Cyber Sector Report also underscored the level of investment in the cybersecurity sector last year, with the industry reporting revenues of over £10 billion.

The National Cyber Security Centre recently revealing that it has defended the UK from a record number of cyber-attacks in the last year, including those targeted at supply chains, has made it clear just how vulnerable the UK's energy sector is likely to be at this moment in time and why it is imperative that the industry pays attention and invests in its cybersecurity operations.

Instead of waiting for an attack to happen, which it will, IT teams operating in this sector must prioritise further investments in cybersecurity technologies to ensure their organisation and legacy systems remain protected. Now is the time to make meaningful cybersecurity investment.

Modernising and Transforming Underlying Infrastructure and Legacy Applications

New technologies are key to enabling the Energy and Utilities sector to succeed in this period of profound change. As a result, utility organisations are introducing new technologies to serve their increasingly sophisticated customers who are expecting the types of digital experiences that other industries offer.

Start-up entrants to the market can be more adept with more dynamic online, digital systems that are born in the cloud. This is in contrast to the established energy companies that often have antiquated legacy infrastructure that is not so agile, always on or available. Legacy providers are under increasing pressure to transform as regulators increasingly set budgets and project funding based on performance and value for money for customers. They are under pressure from the regulator to drive more value for money for customers, as the regulator decides the budgets for each utility company. There can also be fines executed by the regulator with penalties for bad service, non-compliance or acting in bad faith. It is crucial in this regard to be compliant within their infrastructure.

The larger, traditional energy suppliers serving the lion's share of both domestic and commercial customers in the UK are often burdened by legacy systems, which control how they serve consumers and make it more difficult to evolve. The industry last implemented major enterprise system changes about 15 years ago when it moved from existing CRM systems to SAP-based platforms.

Established energy companies in general can be risk averse and they are often reluctant to take action that might expose them to risks and that might impact their ongoing operations, cause reputational damage or earn them fines for non-compliance. They are recognising that they need to accelerate more agile practices, but there is still much work to be done.

It is clear that greater agility and integration are needed to change proof of concepts into something that can be done for all customers, but the bigger the ship, the more difficult and time-consuming it is to turn around. In addition, while larger organisations have higher costs than start-ups, their customers also expect more from them, which leaves them at a disadvantage when they try to implement any kind of innovation.

Legacy systems can be streamlined to make them more efficient. Automation can help in the short to medium term to free capital being spent on tweaking inherited systems and playing catch-up, while providing pathways towards new ways of working. Investing in modernisation would quickly develop a better customer journey and help the legacy provider more readily understand what their customers are asking from them. If they lack the latest technology to enable automation and machine learning, they can partner with organisations that do, to bridge the gap while they focus on the foundations.

SCC's Services for Energy and Utilities

SCC has worked with Energy and Utilities clients for many years, during this time we have developed and continue to evolve our experience, knowledge and understanding of the key challenges faced by our customers in the sector. Our full portfolio applies to many areas that can support our clients, dependent upon the specific natures of their business, however we consider the following to be critical as the sector continues to evolve.

Data Digitisation and Cloud

Cloud services and new platforms are required to underpin digital evolution goals. SCC identify, design and deliver the right workload strategy utilising public or private cloud to help unlock the power of data and drive competitive advantage.

Device as a Service (DVaaS)

Procure, maintain and securely manage the lifecycle of IT equipment with a fixed term monthly price.

Protecting Digital Assets (SIEM)

The increased use of technology provides an ever-widening threat of breach both internally and externally. We provide security and event management solutions that proactively monitor, alert and manage threats to your infrastructure.

Data Digitisation and Cloud

The current economic and regulatory climate, as well as changes in customer and employee expectation are driving Energy and Utilities companies to transform working practices to become more agile, competitive and drive cost savings. Digitisation offers the opportunity for Energy and Utilities companies to embrace new technologies that can enable them to engage with customers proactively and drive better outcomes throughout all phases of the customer lifecycle.

Bringing siloed data together onto a cloud platform, will enable increased process optimisation through the deployment of digital innovations such as RPA, Internet of Things and Data Analytics. By understanding the data produced by their systems, customers and suppliers, advanced data analytics tools can be utilised to identify trends and opportunities for meeting the governments net-zero ambitions.

Cloud-enabled mobile solutions, collaboration tools and analytics can improve the customer experience and deliver greater operational efficiency. Cloud solutions enable Energy and Utilities organisations to bring the full power of legacy data to front-line employees and connect customers, employees and partners across the ecosystem in real time.

SCC can support Energy and Utilities organisations in their journey to a digitised cloud environment. The ability of organisations to move to the cloud will be impacted by their current legacy infrastructures, with complex applications, technical debt and a lack of skills meaning the journey will be long, difficult and if improperly implemented – expensive. To offset this risk, many organisations will gradually move to the cloud, combining aspects of on-site storage, public cloud and private cloud.

SCC can work with Energy and Utilities organisations to streamline the management of hybrid workloads and using our Cloud Readiness Assessment services can match workloads to the most appropriate cloud services provider. Some services cannot be moved to public cloud, due to regulatory and legal restrictions, so organisations may opt for a hybrid cloud solution, which allows some workloads to be managed either on-premise or stored in a private cloud environment.

Cloud Readiness Assessment

Our service approach takes Energy and Utilities organisation's methodically through a holistic review of their IT infrastructure to discover applications and the interconnecting workloads to identify whether they could be moved to a cloud environment. The Cloud Readiness Assessment service ensures the maximum benefit and optimised performance for each workload and from cloud investments.

The Cloud Readiness Assessment focuses on three main areas of adoption:

- Creating an environment ready to receive enterprise workloads, including networking, security, backups, monitoring and identity and access
- Migrating application services to the cloud across Infrastructure as a Service, Platform as a Service and Software as a Service
- Ongoing operations once workloads are live

To identify which applications and workloads are suitable for migration to the cloud, SCC will assess the organisations application landscape, including the related areas of financial, business, operational and environmental factors. The output of this study is a readiness report which provides guidance on the suitability of existing applications to move to a cloud environment, areas of quick wins and estimated budgetary figures for the cost of migration.

Following the study, SCC will propose tailored storage solutions for the Energy and Utilities organisation to maximise the productivity of their workloads and minimise the risk of operational down time during transition. Moving to a hybrid cloud environment will enable organisations to benefit from the flexibility and cost savings associated with shared and consumption priced services.

Our solutions include:

- Colocation – Maximise the return on investment of current compute and storage infrastructure and deliver cost savings to the business by hosting equipment in SCC's UK based enterprise data centres.
- SCC Hyperscale – SCC's Hyperscale Service allows customers to seamlessly host applications and workloads from multiple public cloud platforms, including AWS, Microsoft Azure and Google Cloud. The SCC service provides ongoing management, support and optimisation of an organisation's cloud environments.
- Cloud+ – SCC's secure multi-tenant cloud platform delivers a catalogue of cloud based compute and storage services based on a consumption model. This allows customers to host services in an enterprise data centre environment without large capital outlays.
- Sentinel – Sentinel by SCC is an enterprise level, fully certified OFFICIAL/OFFICIAL SENSITIVE Community Cloud platform, built specifically for customers with high security needs.

Why Digitisation and Cloud for Energy and Utilities?

In such a time of profound change, it is vital that more established legacy providers, within the Energy and Utilities sector, transform their digital processes to keep abreast of the innovations and expectations that are being met by more agile and adept start-up entrants. SCC can help organisations to understand their current storage landscape to road map the best route to cloud. By utilising a hybrid cloud platform, Energy and Utilities organisations can increase the accessibility and value of their business data while ensuring it is secure and being managed in line with regulatory requirements. Increasing data understanding will provide the backbone to the organisations future business strategies and help ensure their success.

DVaaS

Utilising the latest IT technologies is key to the success of long-term business transformation, however legacy environments and outdated IT kit are holding energy organisations back from achieving their full potential. At a time when margins need to be protected, investing in IT equipment which will rapidly become outdated and depreciate in value, will not be high on the agenda of many companies despite the benefits of modernisation.

SCC's DVaaS is a new way for organisations to effectively procure, maintain and securely manage the lifecycle of IT equipment. The IT market is driving the shift from Capex to Opex ICT services. What once required dedicated hardware, time and resources can now be fulfilled remotely via the cloud or by dedicated specialised companies. There has also been a significant shift towards commodity/utility pricing, enabling organisations to free up cash for investments and project that drive improved profitability and growth.
The SCC DVaaS service can provide Energy and Utilities organisations with a cost-effective and simple way to be equipped with the latest technology without Capex expenditure.

DVaaS works by providing customers with a mutually agreed service catalogue of IT bundles, each with clear fixed term monthly charges.

It is possible to include peripherals as part of the bundles, should that be appropriate for the customer. All selected IT equipment bundles are configured with a customer-specific image (Standard Operating Environment) and can be bulk delivered to a centralised location or individual users. During the agreement, SCC will provide full support and delivery of DVaaS equipment including Hardware Maintenance and responding to and resolving any ICT issues a customer (user) might have.

Our Approach

At SCC we are uniquely positioned to deliver this service to our customers. At every stage, we utilise our in-house capabilities for DVaaS which enables us to provide the level of assurance our customers expect. This capability includes:

- Longstanding strategic partnerships with all Tier 1 vendors, enables us to offer a truly vendor agnostic solution
- SCC retains title on devices as a result of internal financing, enabled by our funding partners, allowing customers the potential to recognise this as a true Opex model
- Birmingham based warehouse and dedicated configuration centre capable of processing over 500k devices per annum, with the ability to scale to 1 million
- SCC employs 116 permanently employed field service engineers (not including access to site or third-party engineers)
- Leverage SCC's next-generation services, such as Service Desk, ITIL (V3) Service Management and field service engineers – who respond to 44k hardware and maintenance calls per month
- The SCC Refurbishment and Recycling centre operates to the highest government environmental regulations (WEEE, CPNI and Blancco)

Why DVaaS for Energy and Utilities Organisations?

Energy and Utilities organisations need to protect their profits at time of uncertainty, but also need to transform IT infrastructures to be agile in line with changing expectations. By shifting to a commodity pricing structure, Energy and Utilities organisations will be able to free up cash for investments and projects that will drive improved profitability and growth.
The circular economy of the SCC service will also support sustainability objectives through the sustainable recycling of IT.

Protecting Digital Assets

Energy and Utilities organisations are a high-profile target for cyber-attacks, forming part of the UK's critical infrastructure, 24% of all cyber security incidents in the country last year were aimed at the energy sector. As Energy and Utilities companies look to modernise their underlying IT infrastructure to bring efficiency and productivity gains, they are also increasing the attack surface of their organisation. To meet the requirements of a complex and ever increasing regulatory landscape, Energy and Utilities organisations must utilise technology to protect their physical and digital assets and be able to demonstrate their security compliance to regulators.

Energy and Utilities organisations must invest in advanced cyber security solutions to ensure operational compliance and protect their proprietary data. Achieving this is critical to minimising any risk to customer data, the business's financial standing or its reputation. A shortage of skilled security resources makes this a very difficult task for organisations to undertake independently, meaning a managed service model, working in partnership with an expert provider, is often the best option.

SCC helps our Energy and Utilities customers to develop a comprehensive security strategy that encompasses every stage of the security lifecycle. Our Managed Security Incident and Event Management (SIEM) service provides access to best-in-class threat detection services, delivered by our dedicated and experienced operations team. It delivers a complete view of the visible and 'invisible' threats facing an entire organisation, reducing detection times and improving defence capabilities.

We collect, store and analyse security event data, consolidate log events and network data from customer devices, endpoints and applications distributed around the infrastructure. This data feeds into SCC's enterprise class platform, where an advanced Sense Analytics engine normalises and correlates the data to identify anomalies, uncover advanced threats and remove false positives in real-time. The platform is managed from SCC's Cyber Security Centre where a team of Security Analysts monitor incoming alerts and events 24/7. This team actively seeks to provide advice to customers on the best course of action following detection of a threat, with threat detection notifications delivered automatically to customers.

SCC's Managed SIEM Service is powered by IBM QRadar, which ensures our detection system remains continually up to date with the latest threats and vulnerabilities, as these are provided by IBM X-Force Threat Intelligence which supplies a list of potentially malicious IP addresses including malware hosts and spam sources.

Why Cyber Security for Energy and Utilities Organisations?

Energy and Utilities organisations should have an acute awareness to cyber threat, as the Energy and Utilities sector is the most targeted sector in the UK for cyber-attacks. This makes it crucial to have a robust defence system that is supported by reliable infrastructure. SCC's SIEM service is able to not only protect from threats but can also help to bolster compliance and upgrade archaic legacy computer systems to optimise an organisations environment. It is about being proactive and addressing these concerns before they arrive and before the point of no return or the point of great cost. There are great efficiencies and costs to be saved with this true market leading service.

Our Experience in the Energy and Utilities Sector

United Utilities (UU) manages the regulated water and wastewater network in the Northwest of England, providing services to three million homes and 200,000 businesses. It holds licenses to provide water and wastewater services to a population of approximately seven million people in the Northwest of England.

UU is an example of where SCC provide a portfolio of complimentary services, delivered by a dedicated on-site team to the entire workforce. This includes End User Compute (EUC), Mobile Device Management, Managed Pint, AV Solutions, Break-Fix support, Out of Hours Service Desk, Major Incident Management and Project Services. SCC provides these services over a geographically dispersed selection of sites, from the large HQ through to many small sites that may be in highly rural locations.

We are also actively engaged in UU's "Modern Ways of Working" program which includes a migration to MS O365 and EUC device refresh and a rationalisation of their print estate to better suit new working practices.

Mobile Device Management

SCC managed the build of the fleet of 1400 Samsung mobile phones and hold a spare stock, to ensure immediate swap out is possible. Working with Vodafone, SCC also manages the SIMs in each device. The devices are managed by an AirWatch command centre for the mobile fleet, which SCC can access and utilise in the management of this contract.

Hardware Procurement

Utilising SCC's proprietary asset ordering catalogue toolset, Lifecycle™ we have created a bespoke version for UU for the provision and procurement of pre-configured devices from HP, Panasonic and Samsung. This has created a more efficient system and freed up a number of internal staff so that they can be more productive elsewhere. All items that are procured via the catalogue are asset tagged so they can be securely managed going forward.

End User Computing

SCC has a team of five full time engineers undertaking the task of keeping the UU fleet of almost 7,000 devices up and running. These devices are comprised of approximately 3,000 laptops, 2,000 desktops and over 700 ruggedised laptops. Through this deployment process any old equipment is removed by SCC and then refreshed and redeployed if appropriate, if not then they are remarketed / recycled through SCC's established processes.

Managed Print Solution

SCC provides a Managed Print Service across 336 key locations, having achieved a 65% reduction in devices, from 1,277 devices to 471, a mixture of the reutilised current HP printer estate and Canon MFPs and printers.

Service Desk

SCC provides an Out of Hours Service Desk and a Major Incident Management function from our Service Centre located in Romania. The out of hour's Service Desk provides support from 18:00 – 08:00 Monday to Friday and then 08:00 Saturday until 08:00 Monday.

Audio Visual Services

SCC supplies and maintains all AV devices across the UU estate, including the deployment of Teams Rooms to aid with collaborative working as more staff move to a Hybrid Working model. The on-site SCC team perform a daily check of all rooms to ensure that all AV solutions have very high reliability, uptime and customer use.

Benefits

Working closely with UU as a trusted partner, SCC has managed to deliver a number of benefits including £90k of hardware fix costs through managing the mobile devices, a 50% reduction in annual electricity consumption and 39% reduction in CO2 emissions through a consolidated print infrastructure.

WALES&WEST UTILITIES

SCC has been supporting Wales and West Utilities for nine years delivering a range of fully managed services, including Service Desk, EUC, Security Management and LAN/WAN/SAN and WiFi. Services are provided across two environments, Corporate and Critical National Infrastructure (CNI).

Core to these services are SCC's Data Centre and Hosting Services, delivering a stable and dependable platform, that Wales and West have again chosen to continue for a further three years.

As a provider of CNI, Wales and West Utilities have called on SCC to maintain aged hardware environments and manage multiple vendors with minimal interruption to service utilising very tight change windows and stringent security management.

Detailed planning and change management processes are carried out ahead of all works, leveraging teams across the globe to provide 24 hour operations. With many years of experience in supporting this environment, the SCC team can utilise specialist experience not just of the technology to be deployed, but more importantly of the environment and increased demand for risk mitigation strategies with every action carried out.

During the current period of geopolitical uncertainty and heightened cyber security risk, SCC have continued to support Wales and West with evolving and enhanced plans to reduce risk to operations within the gas supply network.

Now entering into a phase of substantial network upgrade and refresh, the challenge will be to carry out these major projects while maintaining the absolute network stability needed to ensure 24 hour operations and uninterrupted service to their 7.5 million customers in Wales and the South West.

Forming a collaborative alliance with Wales and West's wider partner network has been key to the smooth and successfully delivery of service. Working hand-in-glove with both Wales & West and specialist third-party software and application providers, SCC continue to enable industry leading service management. This collaborative approach will further ensure the effective delivery of platform and infrastructure changes during 2022 and 2023.


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